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Avalanche Notes

U.S. Forest Service
Westwide Avalanche Network

FEBRUARY 94

Weather

A strong ridge of high pressure had established a firm footing along the West Coast in mid-January, and this pattern persisted into February. The result was a dry first week of February in most of the mountain West. Then the ridge abruptly crumbled and opened the way for a persistent, strong storm track that brought heavy snows to almost all the mountain West. In Alaska, however, Alyeska was far to the north of the storm track and recorded but 8% of normal snowfall, for its second driest February of record.

In the Cascades of Washington and Oregon, snowfall was heavy and was a daily occurrence at several sites from the 7th-28th. Stevens Pass recorded 31" of new snow on the 13th-14th, and another 31" on the 23rd-24th; Snoqualmie Pass got 30" on the 23rd-24th; Mt. Rainier reported 42" on the 24th-25th; and Mt. Hood Meadows received 55" on the 23rd-25th. The snowfall king, though, proved to be Crystal Mountain, which recorded 65" on the 24th -- a new Washington state record for 24-hour snowfall! During this storm, Crystal recorded 82" on the 23rd-24th and 108" (that's 9 feet!) on the 21st-25th. For the month, Crystal totaled 166", which was 350% of normal and its second heaviest one-month snowfall of record (172" fell in December, 1971). Stevens Pass got 173% of normal; Mt. Rainier, 163%; and Mt. Hood Meadows, 130%.

Three storms hit the Sierra: the 7th-11th, 17th-22nd, and 27th. The storm of the 17th-22nd was by far the heaviest: Squaw Valley recorded 68"; Alpine Meadows, 75" (36" on the 18th alone); and Sugar Bowl, 83". For the month, Mammoth Mt. got 125% of normal; Alpine Meadows, 174%; and Squaw Valley, 190%.

In the Intermountain area, snowfall was above normal at all sites except Big Sky, MT, which managed but 80%. Bridger Bowl, MT, got 106%; Big Mountain, MT, 127%; Jackson Hole, WY, 146%; and Sun Valley, ID, 155%. A double-barrel storm struck the Wasatch of Utah: first, on the 7th-8th, Alta received 38", and Snowbird, 30"; then on the 10th-11th, Alta got 31", and Snowbird, 30". For the month, Alta recorded 163% of normal snowfall, while Snowbird got 146%.

In Colorado, two storm cycles on the 8th-12th and 18th-24th brought enough snow to boost most sites to above-normal totals for the month. Purgatory was the leader with 200%, followed by Wolf Creek, 165%; Gothic (with 40" on the 8th-9th), 160%; Aspen Mountain, 152%; Copper Mountain, Beaver Creek, Sunlight, Red Mountain Pass, and Telluride, all 140-143%; and Aspen Highlands and Winter Park ski area, 118-120%. At 93-97% were Steamboat, A Basin, Winter Park (town), Berthoud Pass, and Vail. Well below normal at 67% was Breckenridge.

Taos, NM saw a series of storms from the 5th-13th and 18th-23rd and reported 188% of normal February snowfall.

Avalanche

The big storm cycles that swept over the West in February produced big avalanche cycles. In the Cascades, control at Crystal Mt. produced extensive avalanching on the 13th-17th and 23rd-26th. For safety's sake, the patrol used helicopter bombing rather than hand-charge teams on skis. Stevens Pass saw similar soft-slab avalanching during these times. In the Sierra, Squaw Valley and Alpine Meadows released hundreds of avalanches on control, especially on the 7th-8th and 17th-22nd. And in Utah's Wasatch the main cycles of avalanche releases came on the 8th-9th, 11th-12th, and 18th.

Twenty-eight avalanche incidents were reported in February. Two were fatal accidents. Here are details on these two:

Feb 18, Guardsmans Pass, Brighton, UT: Before skiing a slope, two back-country skiers decided to dig a snowpit. The survivor skied a short distance and was starting to dig the pit, when the victim, who was out of sight, apparently stepped too far onto the slab and triggered an avalanche. The survivor was pinned against a tree and was not carried down the slope. After digging himself out, he could not find his companion. He began a beacon search and worked his way down the avalanche path. He located the victim and dug him out from 3 feet of snow in about 30 minutes. He did not respond to resuscitation. Death was either from suffocation or injuries sustained from hitting trees.

Feb 25, Greys River Road, Afton, WY: A party of 17 snowmobilers set out on an overnight trip, following a storm that had dropped 33" of snow in 4 days. At one point the group stopped and had to stomp out a track on foot in the deep snow in order to proceed. While walking back to his snowmobile, the victim was struck and buried by an avalanche that released on the slope above. The survivors had no rescue gear, so they sent out three members for help. Seven hours later, a probe team struck the victim's body under 4 feet of snow. He was dead from suffocation.

Some of the significant, but non-fatal, avalanche accidents were:

Feb 12, Purgatory, CO: A ski patroller sustained a broken leg and ribs.

Feb 15, Stevens Pass, WA: A patroller sustained a broken leg.

Feb 15, Teton Range, WY: A heli-ski guide survived a total burial when he got one hand to the surface.

Feb 21, Marion Lake near Essex, MT: A back-country skier suffered a broken tibia, fibia, and femur.

Feb 24, Ouray, CO: A controlled avalanche did \$250,000 of damage to a building at the Ruby Trust Mine.

Feb 26, Berthoud Pass, CO: A back-country skier suffered a broken leg.

In February, a total of 37 people were caught, 12 partly buried, 4 buried, 5 injured, and 2 killed. The winter's statistics through February read: 83 people caught, 26 partly buried, 19 buried, 7 injured, and 8 killed.

U.S. FOREST SERVICE
WESTWIDE WEATHER AND AVALANCHE NETWORK
FORT COLLINS, COLORADO

FEBRUARY 1994
SUMMARY OF WEATHER AND SNOW CONDITIONS

AREA	SNOWFALL			WATER EQUIVALENT								SNOW DEPTH			TEMPERATURE			WIND SPEED AND DIRECTION					
	TOTAL SNOW-FALL IN.	MAX		TOTAL WATER IN.	MAX		NUMBER OF DAYS						MAX IN.	T E	MIN IN.	AVG IN.	MEAN MAX DEGREES	MEAN MIN F	AVG F	AVG FOR MO.	6 HOUR PERIODS GE	FASTEST HOUR T	D A
		IN	D		IN	D	1	2	5	10													
		24	A		24	A	1	2	5	10													
		HR.	T		HR.	T	GE	GE	GE	GE													
DEN	IN.	E	IN.	IN.	E	.1	.2	.5	1.0	IN.	E	IN.	IN.				MPH	15	20	MPH	DIR.	E	

CENTRAL AND SOUTHERN ROCKY MOUNTAINS

ARAPAHOE BASIN, COLO	35.5	.10	5	9	3.62	.90	8	12	4	3	0		66	12	56	61	20.7	1.6	11.1	15.8M	68M	26M	43	270	16
ASPEN HIGHLANDS, CO	45.6	.08	9	8	3.65	.65	8	9	8	3	0		61	12	37	50	19.7	6.5	13.1	9.6	14	5	36	220	7
ASPEN MOUNTAIN, COLO	58.5	.08	13	8	4.47	1.10	8	11	10	3	1		69	12	48	60	25.9	8.5	17.2	7.0	5	1	28	210	7
BEAR LAKE, RMNP, CO	54.1	.07	11	11	3.78	.83	25	9	8	2	0		60	25	38	48	21.6	13.2	17.4	--	--	--	--	--	--
BEAVER CREEK, COLO	67.4	.05	16	9	3.59	.85	9	11	6	3	0		75	12	50	62	24.3	5.7	15.0	7.2M	4M	0M	--	--	--
BERTHOUD PASS, COLO	45.0	.07	6	9	2.94	.52	9	12	6	1	0		62	12	48	55	22.0	.9	11.4	17.5	72	33	48	230	24
BRECKENRIDGE, COLO	27.9	.07	6	9	1.95	.40	9	7	4	0	0		58	12	46	52	17.1	4.0	10.6	13.1	35	12	33	270	1
COPPER MTN, COLO	46.5	.06	6	5	2.96	.50	9	9	6	1	0		53	12	43	48	23.3	3.4	13.4	21.0M	86M	60M	61	260	23
GOthic, COLO	97.0	.07	27	8	6.73	1.82	8	11	11	6	2		66	21	30	52	25.1	1.7	13.4	--	--	--	--	--	--
KEYSTONE, COLO	30.3	--	6	9	--	--	--	--	--	--	--		53	25	44	48	23.0	2.8	12.9	11.1	23	4	--	--	--
POWDERHORN, COLO	56.5	--	15	12	--	--	--	--	--	--	--		50	22	31	40	18.4	7.2	12.8	8.8M	16M	5M	--	--	--
PURGATORY, COLO	81.7	.07	16	18	5.67	1.50	18	11	9	5	2		69	21	33	52	22.5	7.5	15.0	--	--	--	--	--	--
STEAMBOAT, COLORADO	52.0	.06	9	23	3.15	.80	11	9	7	2	0		61	23	43	50	26.9	11.5	19.2	--	--	--	--	--	--
SUNLIGHT, COLO	51.0	.08	10	8	3.83	.65	8	10	8	3	0		60	22	40	51	24.2	9.4	16.8	--	--	--	--	--	--
TAOS, NEW MEXICO	70.5	.06	10	5	4.17	.80	8	11	8	4	0		103	23	68	87	22.4	11.3	16.8	11.6M	28M	9M	31	270	12
TELLURIDE, COLO	58.1	.06	9	12	3.57	.50	8	12	8	2	0		61	22	41	50	20.5	6.9	13.7	9.3M	20M	8M	36	160	17
VAIL, COLO	50.7	.07	10	9	3.37	.75	9	10	8	2	0		68	12	50	59	23.1	6.2	14.7	7.8M	5M	1M	23	200	24
WINTER PARK S.A., CO	63.1	.06	11	12	3.64	.70	12	12	10	1	0		71	12	55	63	19.3	4.8	12.0	8.5	11	2	26	280	24
WINTER PARK 1E, COLO	29.6	.06	7	12	1.86	.44	12	6	3	0	0		44	12	36	39	27.6	1.0	14.3	--	--	--	--	--	--
WOLF CREEK, COLO	96.7	.09	22	8	8.37	3.10	8	12	11	5	2		105	20	10	84	25.2M	5.6	15.4M	15.6	65	34	45	200	8

INTERMOUNTAIN

ALTA, UTAH	129.5	.08	22	8	10.36	2.23							107	22	60	88	22.2	10.5	16.3	11.3	19	10	40	150	17
BIG SKY, MONT	35.0	--	7	24	--	--	--	--	--	--	--		52	25	39	43	22.1	10.9	16.5	--	--	--	--	--	--
BIG MOUNTAIN, MONT	69.0	--	12	10	--	--	--	--	--	--	--		98	24	71	82	19.5	8.3	13.9	--	--	--	--	--	--
BRIDGER BOWL, MONT	51.0	.05	15	1	2.37	.80	24	8	3	1	0		72	24	54	60	26.3	9.1	17.7	11.9	39	14	31	250	5
GRAND TARGHEE, WYO	69.0	--	9	25	--	--	--	--	--	--	--		64	27	40	49	25.5M	10.1M	17.8M	--	--	--	--	--	--
SCHWEITZER BASIN, ID	62.0	--	8	9	--	--	--	--	--	--	--		90	23	61	75	26.1M	12.4M	19.3M	--	--	--	--	--	--
SNOWBIRD, UTAH	113.0	.09	15	9	9.64	1.76	8	13	11	7	4		91	25	50	73	30.6	14.6	22.6	23.2M	90M	74M	--	--	--
SUN VALLEY, IDAHO	53.1	.07	8	17	3.74	.75	17	10	9	1	0		55	24	25	34	21.8	11.9	16.8	10.8	22	9	31	150	18

WEST COAST

ALPINE MEADOWS, CAL	125.5	.09	36	18	11.92	3.38	18	11	11	10	3		98	22	38	66	34.2	22.0	28.1	28.7	100	87	80	270	10
ALYESKA, ALASKA	8.0	.07	3	8	1.57	.36	2	5	4	0	0		93	1	84	86	20.8	12.3	16.6	4.2	0	0	19	100	20
CRYSTAL MTN 1, WASH	166.0	.06	65	24	9.46	4.78	24	15	11	3	1		118	24	34	57	33.0	22.2	27.6	14.1M	50M	27M	45	240	13
CRYSTAL MTN 2, WASH	106.6	.07	30	24	7.14	2.00	24	17	13	5	2		118	24	49	70	29.1	18.3	23.7	--	--	--	--	--	--
HEAVENLY VALLEY, CAL	72.5	--	19	18	--	--	--	--	--	--	--		62	20	24	43	31.6	12.8	22.2	--	--	--	--	--	--
JUNE MOUNTAIN, CALIF	65.5	.11	14	20	7.36	1.50	20	9	9	5	4		50	20	17	32	--	--	--	--	--	--	--	--	--
MT. HOOD MDWS, ORE.	110.0	.13	32	24	15.08	4.27	24	16	15	12	4		128	25	58	79	35.5	21.5	28.5	15.6	68	42	44	280	17
MT. RAINIER PARADISE	166.0	.09	21	24	16.40	2.40	25	19	17	14	6		168	25	81	113	30.7M	20.7M	25.7M	--	--	--	--	--	--
SNOQUALMIE PASS 1-90	118.0	.10	18	24	12.70	1.87	23	17	15	11	4		98	24	44	65	34.7	21.5	28.1	6.2M	1M	1M	--	--	--
SQUAW VALLEY, CALIF	107.6	.10	29	18	10.85	2.32	18	11	11	8	5		127	22	56	87	30.8	19.8	25.3	28.2	95	83	68	230	17
STEVENS PASS 5E WASH	131.5	--	20	14	--	--	--	--	--	--	--		105	24	50	74	30.3	20.1	25.2	8.0M	18M	5M	--	--	--
STEVENS PASS, WASH	135.0	.06	19	14	9.07	1.20	14	15	12	7	2		99	24	47	70	29.9	19.3	24.6	9.5	21	12	--	--	--
SUGAR BOWL, CALIF	122.0	--	23	20	--	--	--	--	--	--	--		128	21	59	88	33.1M	16.8M	24.9M	13.9M	42M	28M	60	220	16

-- DATA INCOMPLETE OR MISSING

M-ONE OR MORE DAYS OF RECORD MISSING-IF AVERAGE VALUE IS ENTERED, LESS THAN 10 DAYS RECORD IS MISSING

IF M IS ENTERED IN WIND SPEED COLUMN, LESS THAN 37 6-HOUR PERIODS ARE MISSING

GE--GREATER THAN OR EQUAL TO

